Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 5 (paragraph [0001] of the published application) with the following amended paragraph:

This application is a continuation of ~~pending~~ co-pending U.S. Application Ser. No. 10/354,275, filed January 30 2003, U.S. Patent No. 6,764,534, issued July 20, 2004, and which claims benefit to U.S. Provisional Application Ser. No. 60/353,563, filed January 31, 2002.

Please replace the paragraph beginning on page 1, line 23 and ending on page 2, line 13 (paragraph [0004] of the published application) with the following amended paragraph:

When, for example, such apparatus is used to produce a high concentration of oxygen from ambient air for use in various applications, whether medical, industrial or commercial, air which enters the apparatus typically contains about 78% nitrogen, 21% oxygen, 0.9% argon, and a variable amount of water vapor. Principally, most of the nitrogen is removed by the apparatus to produce a gas product, which for medical purposes, for example, typically may contain at least about 80% oxygen. Most such apparatus for medical uses generally are too bulky for use by patients who are traveling or otherwise wish to leave their home environments for any purpose. In those cases, patients will normally forego the use of oxygen concentrators and revert to the use of pressurized oxygen tanks. While oxygen tanks have been very useful in enabling patients to be more ambulatory, they nevertheless are restricted in use, as for example because of limited oxygen storage capacity or because their use may be prohibited in certain modes of public transportation or locations where flammable materials can create a hazard. Although the useful life of oxygen tanks may be extended by the use of oxygen concentration devices ("OCD"), as disclosed, for example, in co-pending U.S. Application No. 09/420,826, filed October 19, 1999, U.S. Patent No. 6,427,690, issued August 6, 2002, their use nevertheless continues to be problematic because of safety and storage concerns, access to re-supplies of oxygen, and continuing medical expenses and reimbursement paperwork for the oxygen.

Please replace the paragraph beginning on page 9, line 13 (paragraph [0040] of the published application) with the following amended paragraph:

As shown in FIG. 11A, the main circuit board 81 is based on the PIC 16F74-1/L microcontroller 77, having an external crystal oscillator 82 with a clock rate of 1 Mhz. The

microcontroller 77 receives input data from: 1.) the analog pressure conditioning circuit (for the oxygen conserving device, hereinafter OCD), 2.) the battery management ~~system~~ system 149 with a nominal 1.5 amp constant current generator, 3.) the valve control 72 (for the pressure swing adsorption, hereinafter PSA), 4.) a rotary switch 86, 5.) the purity test button 87, and 6.) the pressure sensor 76 to indicate sensor pressure. The microcontroller 77 communicates with the operator via three LEDs 125,126 and 127, and an audible alarm 128. Additionally, an hour meter 122 will indicate compressor on time.

Please replace the paragraph beginning on page 10, line 23 (paragraph [0044] of the published application) with the following amended paragraph:

The battery management ~~system~~ system 149, as shown in FIG. 11C, consists of a benchmark BQ2002TSN (U1) battery management chip 91, a Burr-Brown operational amplifier, UPA2334UA (U13) 146, an Astec DC-DC 5 volt converter (DC-1) 89, an MJE3O55T power transistor (Q6) 131, and two supporting MOSFET transistors, IRF9Z34 (Q4) 132 and BS170 (Q5) 133. The operation of this circuit follows: The microcontroller 77 controls the supply voltage (VDD) to the battery-management chip 91. The battery-management chip 91 reads battery voltage via resistors R1 134 and R2 135. When power is applied via the external power supply, the microcontroller Pin 36 supplies five volts to Pin 6 of the battery-management chip 91, turning it on. When power is first applied to the battery-management chip, it goes to a fast charge charging cycle. The cycle causes Pin 8 of the battery-management chip 91 to output five volts and turn on Q5 133 which turns on Q4 132, allowing a nominal 1.5 amps of current to flow into the battery.

Please delete in its entirety the paragraph beginning on page 12, line 15 and ending on page 13, line 2 (paragraph [0050] of the published application).

Please replace the paragraph beginning on page 13, line 3 (paragraph [0051] of the published application) with the following amended paragraph:

The rotary switch 86 is illustrated in ~~FIG. F~~ FIG. 11F. The microcontroller 77 reads the condition of the rotary switch 86 to determine whether the unit is on or off and what flow selection the user has chosen. The unit is in the OFF position when the microcontroller 77 reads the logic low on Pin 28 of the microcontroller 77. A logic high on Pin 28 of the microcontroller 77 indicates that the unit has been turned ON. The microcontroller 77 reads the flow selection of

the rotary switch 86 via Pins 29 through 33 of microcontroller 77. The flow selection is read for Position 1 when a logic low is read on Pin 29 of the microcontroller 77. Flow selection 2 is read when a logic low is read on Pin 30 of the microcontroller 77. This process repeats itself for Pins 31 through 33 for flow selections 3 through 5. The purity test button SW3 87, also illustrated in ~~FIG. F~~ FIG. 11E, is a normally-open switch and is used to put the microcontroller 77 in one of two test modes. When the switch is in its normally-open position, a logic high is applied to Pin 18 of the microcontroller 77, indicating normal operation. When the switch is pressed, the microcontroller 77 reads a logic low on Pin 18 and reads the condition of the rotary switch SW2 86 to determine which of the two test modes it must run. If the rotary switch 86 is set to any flow selection between 1 and 4, the unit breathes 15 breaths per minute defaulting to flow selection 3. This is the first-test condition. The second test is initiated if the flow-selector switch is set to Position 5 and the purity test switch SW3 87 is pressed. In this test mode, the unit breaths the following breaths per minute for three-minute intervals: 15, 17.5, 20, 22.5, 25, 27.5, 30. Both test modes continue until the unit is switched off. When the unit is turned back on again, it resumes normal operation.

Please replace the paragraph beginning on page 13, line 29 and ending on page 14, line 14 (paragraph [0053] of the published application) with the following amended paragraph:

The Three LED's (one red, one green, one yellow) and a buzzer 128 are also illustrated in FIG. 11F and FIG. 11D. The green LED, D9 125, is used during a 1.2 second start-up sequence to tell the user that he or she is turning on the unit. Green ~~LED 130~~ LED 125 also will flash each time a breath is detected and a pulse dose is delivered to the user. The yellow LED, D10 126, is used for battery charging when the unit is in the OFF condition. When the yellow LED is flashing, the unit is charging the battery. When the yellow LED 126 comes to a constant, non-flashing state, the battery is fully charged. This process takes approximately two hours and is visible only when the unit is in the OFF position. When the unit is turned ON and running off the external battery (no external power supply), the microcontroller 77 reads the battery voltage via resistor divider network R67, R68, and Pin 11 of microcontroller 77. When the battery voltage decays to 10.9 volts, the yellow LED 126 and the buzzer 128 come on for one second for every five seconds they are off. This indicates to the user that the battery is in a low condition and should be charged or replaced to continue operation. When the battery decays to 10.5 volts, the

unit automatically shuts down and flashes the yellow LED 126 and buzzer 128 on and off at a frequency of 500 milliseconds. The red LED 127 is used as a pre-condition alarm, a system failure alarm, or an apnea alarm. The table below lists the alarms and alarm functions.

Please replace the paragraph beginning on page 17, line 8 (paragraph [0058] of the published application) with the following amended paragraph:

Although the apparatus according to our invention is shown by a preferred embodiment, those skilled in the art will be able, from the description of our invention as herein provided, to produce a combined PSA/OCD apparatus, the individual fluid, electric and electronic components and controls of which can be found in the art or made by one skilled in the art following a reading of this description of the preferred embodiment. It also is possible to use a three bed PSA as described in co-pending U.S. Application Serial No. 09/851,750, filed May 9, 2001, U.S. Patent No. 6,558,451, issued May 6, 2003, the use of which may not require a mixing tank because of the relatively constant output pressure achieved by a PSA made according to that invention. It also is possible, as illustrated schematically in FIGS. 14 and ~~14B, to include a known oxygen monitor~~ 14A, to include a known oxygen monitor 147 to measure the actual rather than the calculated concentration of oxygen being delivered to the user. In addition, those skilled in the art may be able to include other known safety features for use in monitored and/or unmonitored medical purposes. If it also is desired to be able to variably control the concentration of oxygen in the product gas, then it also may be possible to incorporate into the invention a second adjustable purge loop, not shown but described In U.S. Patent No. 5,871,564.

Please replace the paragraph beginning on page 18, line 4 (paragraph [0060] of the published application) with the following amended paragraph:

As shown and described, the apparatus can be powered any one of three sources, including a removable, nickel metal hydride battery pack which when fully charged can supply power to the apparatus for approximately 50 minutes without external power; an AC adapter to connect the apparatus at ~~connector 126~~ connector 136 to a nominal 120 volt AC outlet to convert the 120 volt AC to 13.5 volt DC; and a "cigarette lighter" adapter for a similar connection to a nominal 13.5 volt DC automobile battery. As shown, both the AC adapter and the automobile battery can power the apparatus and recharge the battery pack simultaneously, taking approximately two hours to charge the battery pack. Similarly, the battery pack may be detached

from the apparatus by conventional plug means to facilitate the use of fully-charged spare battery packs.